

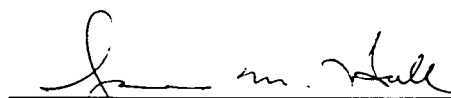
Abstract Submitted for the
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Conceptual Design for a Neutron Imaging System for Thick Target Analysis Operating in the 10 - 15 MeV Energy Range.* FRANK S. DIETRICH and JAMES HALL, Lawrence Livermore National Laboratory** -- Fast neutron imaging offers the potential to be a powerful non-destructive inspection tool for evaluating the integrity of thick sealed targets. This is particularly true in cases where one is interested in detecting voids, cracks or other defects in low-Z materials (e.g. plastics, ceramics, salts, etc.) which are shielded by thick, high-Z parts. In this paper we present the conceptual design for a neutron imaging system for use in the 10 - 15 MeV energy range and discuss its potential applications in nuclear stockpile stewardship. The background of this project, currently under development at LLNL, will be outlined and computer simulations will be presented which predict system performance. Efforts to assess the technical risks involved in the development of the system will be discussed and the results of a recent experiment designed to evaluate background radiation levels will also be presented.

*Submitted by JAMES HALL

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